## Exercice N°4 :

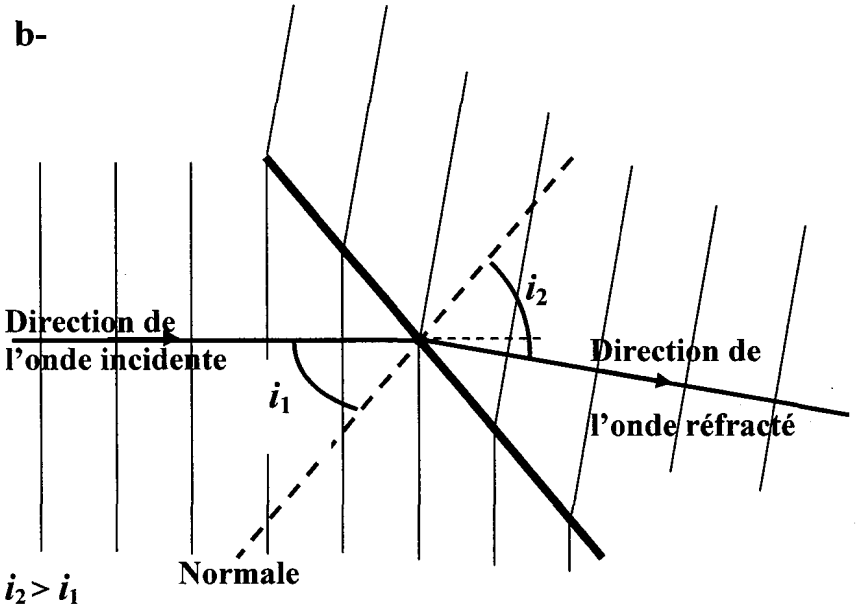
1°)

a- $\frac{\sin i_1}{\sin i_2} = \frac{v_1}{v_2} \Rightarrow \sin i_2 = \frac{v_2}{v_1}.\sin i_1$

$\sin i_2 = \frac{30.10^{-2}}{20.10^{-2}}.\sin 20 = \frac{3}{2} \times 0{,}3420 = 0{,}5130$

$i_2 = 30{,}86°$

b-




$i_2 > i_1$

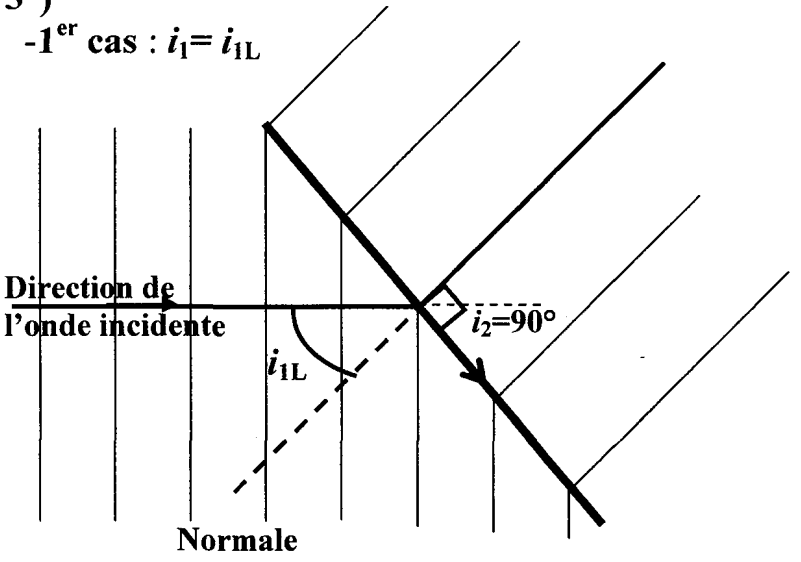
2°) Si $i_2 = 90°$ alors $i_1 = i_{1limite}$

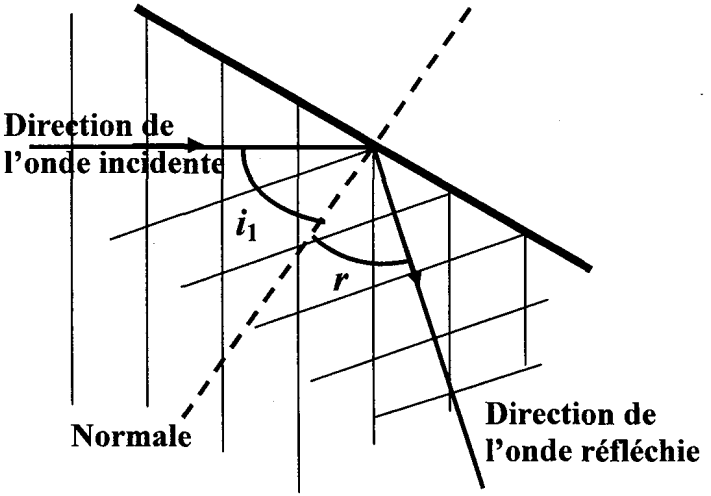
$\frac{\sin i_{1L}}{\sin 90} = \frac{v_1}{v_2} \Rightarrow \sin i_{1L} = \frac{v_1}{v_2}.\sin 90 = \frac{2}{3}$

$\Rightarrow i_{1L} = 41{,}8°$

3°)

-1er cas : $i_1 = i_{1L}$




- 2éme cas : $i_1 > i_{1L}$ : **Réflexion totale.**